

Dr. MICHAEL KAVANAUGH  
Research Economist  
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PRESENT POSITION: Private practice, since 1985

#### PREVIOUS POSITIONS

Senior Economist/Project Manager, ICF Incorporated, 1983-85,  
Washington DC  
Research Director, Public Interest Economics Foundation, 1976-83  
Washington DC & San Francisco CA  
Assistant Professor, Northern Kentucky University, 1975-76

#### EDUCATION

Ph.D., Economics, University of Cincinnati, 1975  
BA, Economics, Xavier University, 1970

#### EXPERIENCE

Dr. Kavanaugh is an independent research economist with over 29 years of experience in applied economics. He is a national expert in environmental enforcement and policies for municipal and industrial point sources of pollution. He has written about groundwater management and climate change. He has performed many natural resource damage assessments and regional economic impact assessments. Selected projects include:

#### ECONOMICS & FINANCE

Using financial after-tax, cash-flow models Dr Kavanaugh has provided expert economic and litigation support services to the United States (and others) in Clean Water Act, Clean Air Act, Superfund, Resource Conservation and Recovery Act Enforcement Cases. He estimates the economic benefit gained by entities that violate their discharge permits; and, measures the effect of penalties on their financial position.

Prepared testimony on the impact on ratepayers of adopting cooling water intake controls at a nuclear power plant.

Prepared testimony on the economics of operating a landfill (Orange County, NY).

Prepared testimony on the influence of groundwater quality on residential property values; and advised and submitted affidavits supporting Alaska's position on oil and gas leasing in the North Aleutian Basin.

Conducted several analyses of the economic effects of water quality including:

- estimating the benefits of clean water on beaches and rivers;
- developing methods to determine the effects of water quality policies on agricultural output, employment, and income;
- developing methods to estimate the benefits of preserving groundwater quality;
- estimating expected and realized benefits and costs of irrigation projects; and
- Critiquing efforts to regulate effluents from several industries. Examples include:

Kailua Beach State Park - valued a three-mile public beach based on recreational use and estimated the damage to the beach from wastewater treatment plant effluent. The work involved reviewing, updating and synthesizing a variety of studies that valued recreation.

Florida Beaches - valued beach closures from pollution at several Florida beaches. The work involved extensive use of the Natural Resource Damage Assessment models for coastal and marine environments.

Estimated the employment and income effects from spending the *Exxon Valdez* settlement. The work involved characterizing the options in the restoration plan in terms of input/output models.

Conducted several analyses of the U.S. petroleum industry to estimate current and future production in wetlands and in the arctic; and to estimate the cost effectiveness of technologies to control produced water discharges.

Estimated current and future greenhouse gas emissions by fuel, sector, and region. The work involved estimating long-term energy use using an economic model based on prices and income and forecasting combustion technology. Atmospheric modelers use the work.

## PUBLICATIONS

"Fuel economies available from ultrahigh bypass jet engines" in *Cost estimates of measures available to reduce U.S. greenhouse gas emissions by 2010*. ICF Washington D.C. 1990.

"End-use efficiency and NOx emissions in aviation". In S. Meyers, Ed. *Energy efficiency and structural change: Implications for the Greenhouse problem*. Lawrence Berkeley Laboratory, Berkeley CA 1988.

"Estimates of future CO, N2O and NOx emissions from energy combustion", *Atmospheric Environment*, March 1987.

"Tropospheric CH4/CO/NOx: The next 50 years", Co-author with Anne M. Thompson, UNEP/USEPA International Ozone Conference, 1986.

*Eliminating CFCs from aerosol uses: the U.S. experience and its applicability to other nations*. U.S. Environmental Protection Agency, Washington, February 1986.

"The 1983 world oil surplus: some implications for OCS leasing", Prepared for the U.S. House Subcommittee on the Panama Canal/OCS Washington, April 1983.

"The effect of OCS leasing schedules and procedures on fair market value", Paper presented to the Western Economic Association, Seattle July 1983.

*Efficient strategies for preserving groundwater quality*, with Rob Wolcott. U.S. Environmental Protection Agency, May 1982.

*Exclusive territorial distributorships and consumer welfare: the case of beer*. Food Marketing Institute, Washington D.C. 1982.

*The Great Giveaway*, with others, Sierra Club, October 1982.

*The public benefits of the proposed Union Pacific, Missouri Pacific, Western Pacific Consolidation*. Interstate Commerce Commission, August 1981

*Regional economic impacts of OCS oil and gas development*, with Susan Little and Rob Wolcott. Governor's Office of Planning and Research, California, November 1976.

**MICHAEL KAVANAUGH**

Federal Court Trial Testimony Since 1/91

NRDC v. Texaco - Wilmington - 2/91, 88-263-JRR  
U.S. v. City of San Diego - San Diego - 2/91, 88-1101-B(IEG)  
SCLDF v. City/County of Honolulu - Honolulu - 1/93, 90-00218-HMF  
Friends of Earth v Laidlaw - Columbia SC - 11/93, DSC 3-92-1697-17  
PIRG v. MEI - Newark - 1/94, DNJ 89-3193  
Friends of Earth v Laidlaw - Columbia SC - 7/95, DSC 3-92-1697-17  
Friends of Earth v. Gaston Recycling 7/95, DSC 3-92-2574-0  
PIRG v. Hercules - Camden NJ - 2/97, DNJ 89-2291  
U.S. v. Rapanos *et al.* - Detroit MI - 10/2000, 94-CV-70788DT  
PIRG v. Rahway - Rahway NJ - 4/2001, UNN-L-163-98

Deposition Testimony since 1/91

U.S. v. San Diego 1/91, 2/91, 88-1101-B(IEG)  
SCLDF v. C&C Honolulu (Sand Island) 2/91, 90-00219 ACK  
U.S. v. Louisiana Pacific & Simpson Paper 4/91, C-87-0567-MHP  
PIRG v. Hercules 7/91, DNJ 89-2291  
U.S. v. Corning 9/91, 3:CV-90-207  
NRDC v. Total Petroleum 5/92  
PIRG v. Witco Chem. 5/92, DNJ 89-3146  
Hawaii's Thousand Friends v. C&C Honolulu (Honouliuli) 6/92, 90-00218-HMF  
PIRG v. Circuit Foil 12/92, DNJ 89-5371  
Arkansas Wildlife Fed. v. Hudson Food 5/93  
U.S. v. Lawrence Cty. 5/93, C-1-91-302  
PIRG v. Essex Cty. 6/93, DNJ 92-4465  
TN. Enviro. Council v. Dana 4/94, 1-92-0074  
Friends of the Earth v. Gaston Recycling 1/95, DSC 3-92-2574-0  
Stevens v. McGinnis, Inc., *et al.* 2/95, C-1-93-442  
Save Our Beaches v. C&C Honolulu (Kaneohe/Kailua) 3/95, 92-00263 -DAE  
City of Independence, Mo. v. Amoco 8/96  
California Sportfishing Alliance v. El Dorado 8/96, CV-S-95-699  
SF Baykeeper v. Dow Chemical Co., 9/98, C97-01988  
American Canoe Association v. Green Valley-Greenwood PSD, City of St. Albans and Dunbar PSD, WVA. 10/98, 97-0949  
Interfaith Community Organization v. Shinn *et al.*, 2/00, 93-4774, 94-3434, 94-3793  
U.S. v. Rapanos *et al.*, 9/00, 94-CV-70788DT  
American Littoral Society V. Rahway Valley Sewerage Authority 10/00, UNN-L-163-98  
American Canoe Association v. WASA, 4/02, 1:99cv02798(HHK)  
Sierra Club *et al.* v. Hamilton County, 4/03 1-02-107  
Northern Plains Resource Council v. Fidelity Exploration & Production, 7/04, CV-00-105-BLG-SEH